

| Poster Session | Presenter Name | Poster Title | Institution |
|---|-----------------------|--|--------------------|
| <i>Posters are scheduled for either the night of Tuesday, July 15 or Wednesday, July 16</i> | | | |
| Accelerators | | | |
| Tues. | Amundson, James | Multi-Scale, Multi-Physics Beam Dynamics Framework Design and Applications | FNAL |
| Wed. | Mori, Warren | Petascale Particle-in-Cell Simulations of Plasma Based Accelerators | UCLA |
| Tues. | Qiang, Ji | SciDAC Advances in Beam Dynamics Simulation: From Light Sources to Colliders | LBNL |
| Advanced Data Management/Distributed Systems | | | |
| Tues. | Chervenak, Ann | Enabling Petascale Science: Data Management, Troubleshooting and Scalable Science Services | ISI/USC |
| Wed. | Miller, Ethan | High-Performance Metadata Indexing and Search in Petascale Data Storage Systems | UCSC |
| Wed. | Pordes, Ruth | Open Science Grid Project/New Science Enabled by the Open Science Grid | FNAL |
| Tues. | Pothen, Alex | The CSCAPES Institute: Recent Progress | Purdue U |
| Applied Mathematics | | | |
| Wed. | Canning, Andrew | New Eigensolvers and Preconditioners for Large-Scale Nanoscience Simulations | LBNL |
| Wed. | Fischer, Paul | Petascale Applications for Reactor Thermal Hydraulics | ANL |
| Wed. | Lee, Lie-Quan | Computational Science Research in Support of Petascale Electromagnetic Modeling for the SciDAC COMPASS Project | SLAC |
| Tues. | Li, Sherry | Evaluation of SuperLU on Leading Multicore Architectures | LBNL |
| Wed. | Ligocki, Terry | Embedded Boundary Grid Generation Using the Divergence Theorem, Implicit Functions, and Constructive Solid Geometry | LBNL |
| Wed. | Samulyak, Roman | Front Tracking Simulation of Pellet Ablation for Tokamak Fueling | BNL |
| Tues. | Shephard, Mark | Curved Mesh Correction and Adaptation Tool to Improve COMPASS Electromagnetic Analysis | RPI, SLAC |
| Tues. | Trebotich, David | Performance of Embedded Boundary Methods for CFD with Complex Geometry | LLNL |

Astrophysics

| | | | |
|--------------|---------------|--|--------------|
| Tues. | Endeve, Eirik | Magnetic Field Generation by the Stationary Accretion Shock Instability | ORNL |
| Wed. | Lamb, Don | Large-Scale Simulations of Buoyancy-Driven Nuclear Burning | U of Chicago |
| Wed. | Nugent, Peter | Optimizing SN Ia Follow-up in Future Dark Energy Surveys | LBNL |
| Wed. | Woosley, Stan | The Deflagration-Detonation Transition in Type Ia Supernovae | UCSC |
| Tues. | Zingale, Mike | Astrophysical Applications of the Maestro Code | SUNY |

Chemistry

| | | | |
|--------------|--------------------|--|------------|
| Tues. | Fann, George | Advanced Scalable Fast O(N) Methods for Multiresolution Computational Chemistry | ORNL |
| Wed. | Gordon, Mark | Advances and Applications of Correlated Electronic Structure Theory | Iowa State |
| Tues. | Harrison, Robert | An Integrated Approach to the Rational Design of Chemical Catalysts | ORNL |
| Wed. | Mundy, Christopher | Molecular Simulation of Complex Chemical Systems | PNNL |
| Tues. | Shepard, Ron | Advanced Software for the Calculation of Thermochemistry, Kinetics and Dynamics | ANL |

Climate

| | | | |
|--------------|--------------------|--|----------------|
| Wed. | Kotamarthi, Rao | Generating Data Ensembles Over a Model Grid from Sparse Climate Point Measurements | ANL |
| Tues. | Randall, David | Simulation of Global Cloudiness | Colorado State |
| Wed. | Washington, Warren | The Use of the Climate-Science Computational End Station Development and Grand Challenge Team for the next IPCC Assessment: An Operational Plan | UCAR |
| Tues. | Zhu, Wei | Joint Cluster and Non-Negative Least Squares Analysis for Aerosol Mass Spectrum Data | BNL |
| Tues. | Zhong, Yafang | CCSM3 Simulation of Pacific Multi-Decadal Climate Variability: The Role of Subpolar North Pacific Ocean | U of Wisconsin |

Combustion

| | | | |
|--|--------------------------|---|--------------------|
| Wed. | Bell, John | Interaction of Turbulence and Chemistry in a Low-Swirl Burner | LBL |
| Tues. | Chen, Jacqueline | High-Fidelity Simulations for Clean and Efficient Combustion of Alternative Fuels | SNL |
| Tues. | Im, Hong | Direct Numerical Simulation of Turbulent Non-Premixed Flame Extinction by Water Spray | U of Michigan |
| Wed. | Najm, Habib | High-Order AMR Computations of Reacting Flow with Adaptive Reduction of Chemical Stiffness | SNL |
| Computer Science | | | |
| Tues. | Anderson, Kelly | Molecular Simulations of Surfactant Assisted Aqueous Foam Formation | Proctor & Gamble |
| Tues. | Tsigelny, Igor | Simulation and Modeling of Synuclein-Based 'Protofibril Structures' as a Means of Understanding the Molecular Basis of Parkinson's Disease | UCSD |
| Future Computing Systems (FCS)/Facilities (FAC) | | | |
| Tues. | Dahlgren, Tamara (Tammy) | Gaining Confidence in Scientific Applications through Executable Interface Contracts | LLNL |
| Wed. | Marin, Gabriel | Managing Locality in Grand Challenge Applications: Analysis and Tuning of the Gyrokinetic Toroidal Code * | Rice |
| Tues. | Tallent, Nathan | HPCToolkit: Performance tools for Scientific Computing * | Rice |
| Fusion Physics | | | |
| Wed | Batchelor, Don | Simulation of Wave Interactions with Magnetohydrodynamics | ORNL |
| Tues. | Cary, John | First Results from Core-Edge Parallel Composition in FACETS Project | Tech-X Corporation |
| Tues. | Chang, C.S. | Toward a First-Principles Integrated Simulation of Tokamak Edge Plasmas | NYU |
| Wed. | Dorland, William | Fluctuation Spectra and Anomalous Heating in Magnetized Plasma Turbulence | U of Maryland |
| Wed. | Jardin, Steve | The M3D-C1 Approach to Simulating 3D 2-Fluid Magnetohydrodynamics in Magnetic Fusion Experiments | PPPL |
| Tues. | Lele, Sanjiva | Towards Petascale Shock/Turbulence Computations | Stanford |
| Tues. | Lin, Zhihong | Verification and Validation of Petascale Simulation of Turbulent Transport in Fusion Plasmas | UCI |

| | | | |
|--------------------------|-------------------|---|----------------|
| Wed. | Ren, Chuang | Particle-In-Cell Simulations for Fast Ignition | U of Rochester |
| HPC | | | |
| Wed. | Hall, Mary | PERI Auto-Tuning | ISI/USC |
| Wed. | Marin, Gabriel | Managing Locality in Grand Challenge Scientific Applications: Analysis and Tuning of the Gyrokinetic Toroidal Code * | Rice |
| Tues. | Fowler, Robert J. | Performance Engineering Challenges: The View from RENCi * * | RENCi |
| Tues. | Tallent, Nathan | HPCToolkit: Performance tools for Scientific Computing * | Rice |
| Life Science | | | |
| Tues. | Crowley, Michael | CBH I Processivity/Renewable Energy: BioEthanol | NREL |
| Wed. | Edwards, Rob | The Smallest Cells Pose the Biggest Problems: High Performance Computing and the Analysis of Metagenome Sequence Data | ANL |
| Tues. | Lichtner, Peter | Towards Petascale Computing in Geosciences: Application to the Hanford 300 Area | LANL |
| Tues. | Samatova, Nagiza | Coupling Graph Perturbation Theory with Scalable Parallel Algorithms for Large-Scale Enumeration of Maximal Cliques in Biological Graphs | ORNL |
| Wed. | Scheibe, Timothy | Hybrid Numerical Methods for Multiscale Simulations of Subsurface Biogeochemical Processes | PNNL |
| Wed | Smith, Jeremy | Cellulosic Ethanol: A Molecular Mechanics Force Field for Lignin | ORNL |
| Materials Science | | | |
| Tues. | Vashista, Priya | Cracking Under Stress | USC |
| Wed. | Yang, Jihui | Atomistic Structure and Nucleation of Nanoprecipitates in Thermoelectric PbTe-AgSbTe₂ Composite | General Motors |
| Nuclear Physics | | | |
| Tues. | Dean, D.J. | Probing the Nuclear Force in Medium Mass and Heavy Nuclei: The Computational Nuclear Structure INCITE Project | ORNL |
| Wed. | Roche, Kenneth | Building a Universal Nuclear Energy Density Functional | ORNL |

| | | | |
|----------------------|-------------------|--|-----------|
| QCD | | | |
| Wed. | Joo, Balint | Continuing Progress on a Lattice QCD Software Infrastructure | JLab |
| Tues. | Fowler, Robert J. | Performance Engineering Challenges: The View from RENCi * * * | RENCi |
| Visualization | | | |
| Tues. | Grochow, Keith | Oceanographic Workbench | U of Wash |
| Wed. | Huang, Jian | Time-Varying Multivariate Visualization for Understanding Terrestrial Biogeochemistry | ORNL |
| Tues. | Moreland, Ken | Institute for Ultrascale Visualization/Remote Rendering for Ultrascale Data | SNL |
| Wed. | Papka, Michael | Streaming Visualization for Collaborative Environments | ANL |

| | |
|-------|--------------|
| * | also FCS/FAC |
| * * | also QCD |
| * * * | Also HPC |
| | |